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A N
E S S A Y

On the Nature and Properties of

W A T E R.

Shewing its prodigious Use ;

And proving it to be an

UNIVERSAL MEDICINE,

Both for preventing and curing

The Diseases to which the Human Body is subject.

By FREDERICK HOFFMAN, M.D.

Physician to his present Majesty the King of Prussia.

L O N D O N :

Printed for L. DAVIS and C. REYMERS,
Opposite Gray's-Inn Gate Holborn,
Printers to the Royal Society.

MDCCLXI.

AN ESSAY

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ON THE
VIRTUES and MEDICINAL USES
OF
W A T E R.

HOW earnestly a Medicine, capable of subduing all Disorders, of whatever Nature, has been desired, is sufficiently known; and doubtless immortal Honours ought to crown the Man, who should be so fortunate as to discover it; since the Recovery of the Sick, and the Safety of Mankind in general, are so nearly connected with a Discovery of this Nature. But since we have not hitherto found a Medicine capable of subduing with Certainty *any one* Species of Disorder, so we have the greater Reason to despair of finding

one capable of eradicating and baffling the *whole Train* of Diseases to which Mankind are subject; for if we attentively reflect on the Difference of Constitutions, on the numerous and often contrary Causes of Diseases, and on the Virtues of Medicines varying according to the different Constitutions of the Patients to whom they are administered, we shall easily perceive, that it is in vain to rack the Invention, and spend our Time in the Pursuit of an universal Medicine.

But if there is in Nature a Medicine that deserves the Name of *Universal*, it is, in my Opinion, *Common Water*: The Use of this is so general, and so necessary to us all, that we can neither live, nor preserve our Bodies sound and healthy, without it: For it guards against every Disease, protects and defends the Body from all kind of Corruption that may prove fatal to Life, and answers all possible Intentions of Cure; so that, without it, no Disorder, whether chro-
nical or acute, can be happily and suc-
cessfully removed. For Confirmation of
this



this Opinion, I shall not insist on the medicinal Springs, whether hot or cold; nor attempt to prove their salutary Virtues in subduing various Disorders; but confine myself entirely to common Water, though of the best and purest Kind, the universal Use of which I at present design to recommend.

Since, therefore, I am to consider Water as a universal Medicine, in preventing and curing Diseases; and since I intend to prove, that it is so, by the strongest and best Reasons I possibly can, I think it will not be improper to premise a few Things, with regard to the natural Necessity our Bodies lie under, of being ruined or destroyed one Time or other; that these Things being known, we may be able, with greater Accuracy, to discern what Diseases are curable, and what are not. As to the natural Necessity of dying, it is sufficiently known, that the Duration of our Bodies, and a Prevention of that Putrefaction to which they are so naturally disposed, depend entirely upon the perpetual and uninterrupted Circulation of the Blood and

Humours; for while this Circulation is entire and unobstructed, so long we are said to be alive; but in Proportion as it decreases, or is impaired, we make gradual Advances towards the Period of our Existence. It is therefore this Motion alone, that guards the Body against Corruption, because it hinders that State of Rest, which is the Cause and Foundation of all Putrefaction, from taking place in the heterogeneous Fluid, with which the Parts of all Animals abound.

Our Bodies would doubtless enjoy an eternal Duration, if we could for ever preserve and maintain the Circulation of the Blood; but since human Weakness, and the wretched Condition of our mortal Nature, render this impossible, it is at least worth while to enquire into the Cause which may produce a Deficiency or Decrease of this Circulation, which, in my Opinion, is as follows.

This vital Circulation of Humours, is carried on by Organs and Canals; the elastic or springy Fibres of the Muscles, which are furnished

nished with a successive and reciprocal Dilatation and Contraction, constitute the Organs. These Organs are Vessels, some of larger, and others of lesser Diameters. When, therefore, at any Time, the Springiness and Strength of the Fibres are so far diminished, as not to bear a due Proportion to the Quantity of Humours necessary to be moved; and when these Humours are not quickly and expeditiously carried thro' the smallest Tubes, Stagnations of the Humours must inevitably happen in the capillary, or minute Vessels; and hence Putrefactions arise, those fruitful Sources of Disorders and Death.

For as in all Machines, the Springiness and moving Forces of the constituent Parts are weakened and impaired by a Change in the Matter of which the said Machines are made; so it also happens in our Bodies, that the Fibres, which alone are the Instruments of Motion, become, in Process of Time, thick, hard, solid and dry: For this Reason, they not only move with Difficulty, but the Pores and minute Passages, being

being by that Means rendered narrower, hinder the Fluids from being carried thro' their Channels in an equal and uniform Course. This is sufficiently evident from the Flesh of old Animals, which, by Reason of its Hardness and Solidity, requires a stronger Heat, and longer Time, to render it soft and tender, than that of young Animals. Hence we reasonably conclude, that if the same State, the same Motion of the Fibres and Vessels, and the same Apertures in the Pores and minute Passages, could be preserved, Life might of course be protracted for ever, if external Causes, and foreign Degrees of Violence did not interfere to terminate it. That this surprizing Effect may possibly be produced, either by Medicines, or a proper Regimen, is a Fact which can by no means gain the Assent of those who are ignorant of the Virtues and Qualities of natural Bodies. It is however not only probable, but strictly true, that many have fallen short of that Period of Life and Duration, which the natural Temperament and Constitution of their Bodies seemed to promise,

promise, by either not knowing, or despising those Rules, which if observed, would, from the very Nature of the Thing, have procured them that Blessing; so that the greater Part of the human Species, either by exorbitant Passions, Intemperance with regard to the Non-naturals *, or a criminal Neglect to distinguish between Things of a salutary and noxious Nature, unavoidably shorten their Days, and render their very Existence a Foundation for Distress, Calamity, and Misery.

Having thus explained the natural and internal Cause and Origin of Death, it will not be improper to assign a few Reasons why some Diseases are incurable, and of so stubborn a Nature, that they will not yield to the most powerful Remedies, administered with the greatest Skill. Now that there is a certain Analogy and Proportion between the Agent and the Patient, and that Effects can only be produced by their proper and

* By this Word, Physicians mean Meat and Drink, Sleep and Watching, Motion and Rest, Retention and Excretion, and the Passions of the Mind.

adequate Causes, are Truths sufficiently proved and explained, both by Reason, and the Laws of Motion : When therefore obstinate Obstructions of the Vessels, Indurations of the Viscera, Effusions of the Humours into the Cavities of the Ducts, or Passages, and consequent Putrefactions happen, what Physician is able to discover Medicines of so powerful and efficacious a Quality, as to subdue and remove these Disorders? Who can put a seasonable Stop to the remote and internal Inflammations of the more noble Parts, and the Mortifications that succeed them? Or what Man is there found among all the venerable Professors of the healing Art, who can, with Certainty calm the preternatural or irregular Commotions of the nervous System? If I could once find the happy Man, who, by any sort of Medicines, could perform such miraculous Cures, I would not only pronounce him a second *Æsculapius*, but loudly proclaim, that he was sent from Heaven as a common Blessing to the Earth; since I am firmly persuaded, that no acute Disorder could possibly prove mortal to the

Patient

Patient who should have the good Fortune to be under his Care.

We must also, on this Occasion, enquire whether there are in Nature, Medicines peculiarly adapted and calculated to remove particular Disorders. It is universally known, that some Medicines are, even in our Days, highly extolled as Specifics against certain Diseases. Thus the Peruvian Bark is esteemed a Medicine of divine and inestimable Efficacy against Fevers. Quicksilver is highly extolled against a Lues Venerea, Opium is said to be the most efficacious Assuager of all kinds of Pain. Steel is called the sovereign Reliever of the hypochondriac. Sulphur is accounted a most valuable Pectoral. Castor is judged to have the most happy Influence on the Nerves. Bitters are applauded as the most suitable Remedies in dropfical Cases, and ill Habits of Body. Nitre is said to be of uncommon Efficacy, in allaying feverish Heats. But though these Medicines are justly distinguished on account of their Virtues, and

their Praises deservedly celebrated, yet any
 Person who has been for a considerable
 Time employed in the Practice of Physic,
 cannot fail to observe, that they are by no
 Means sufficient to remove the respective
 Disorders to which they are appropriated :
 For who does not know, that almost all
 Distempers are nourished and fomented by
 different, and often by contrary Causes ?
 Who is ignorant, that the same Diseases, in
 different Stages, are attended with a dif-
 ferent Series of Symptoms ; and that, ac-
 cording to these, there is more or less
 Danger in the Case ? Who is not apprised
 that there are different Constitutions ; and
 that on these the Actions of Medicines vary
 very remarkably ? Hence it must necessarily
 follow, that one and the same Medicine
 must produce different, and even contrary
 Effects, according to the different Consti-
 tutions of the Patients to whom it is ad-
 ministered ; for it is carefully to be adverted
 to, that Medicines do not act according to
 their own inherent Qualities, but according
 to the Constitution of the Patient to whom
 they

they are given ; or, in other Words, the Force of Remedies is the Result of a mechanical, mutual, and reciprocal Action and Re-action of Medicines and Constitutions ; so that if a Medicine acts upon the Body, the Body returns the Favour, and acts in like Manner upon the Medicine. Hence we may judge, how daring and impious the Practice of those is, who, not regarding the Diversity of Constitutions, the Causes of Diseases, and other Circumstances, invariably prescribe in the same Disorder, the same Remedy, exhibited in the same Manner, as blundering and unskilful Physicians do, to the great Reproach of Physic, and the great Emolument of Undertakers, Grave-diggers, and all that Class of Men, who live by burying the Dead : For the Physician who carefully considers the above Observations, will not readily adhere to one and the same Remedy, in one and the same Disorder, unless all Cases are directly alike.

It now remains that I fix and ascertain the precise and determinate Sense, in which

C. 2 Water

Water may be said to be an universal Medicine. Now I affirm, that Water is excellently adapted to all Constitutions, and even at all Times and Seasons whatever; that there is not in Nature, a more noble or efficacious Preservative against Diseases; that in acute, as well as in chronical Disorders, it affords a most certain Relief; and lastly, that its Use answers all possible Intentions with regard to preserving against, and curing Distempers: But since there is a great Difference between different Waters, we are carefully to enquire which are best calculated for answering this medicinal Intention; for it is not to be denied, that the Nature and Properties of particular Waters, differ so far as to be easily distinguished, even by the Taste of such as accustom themselves to drink Water. But the best way of distinguishing them is, by chemical Trials, their Weight, and mixing them with various Substances. It must not be imagined to be a homogeneous or similar Fluid; numerous Experiments prove it to be a Mixture of different Parts. Thus all Waters contain an aerial or æthereal Principle, on which
their

their elastic or springy Property seems entirely to depend; for all Waters are more or less expansive and contractive, as they contain more or less Air or Æther. This evidently appears in the Water-Thermometer, where the included Liquor fills a greater or lesser Space, in Proportion to the greater or lesser Degree of Heat applied to it: For it is the Nature of all Liquors to admit a great Quantity of the æthereal Fluid when they are heated, and again eject it as they are cooled; as we know by particular Experiments made in a very severe Winter. The Quantity of Air or Æther residing in Water, cannot perhaps, be better determined, than by Means of the Air-Pump; for the more subtile Waters, placed in an exhausted Receiver, throw up numerous Bubbles, and, if somewhat heated, flow over the containing Glass; as, on the contrary, those which are grosser and more ponderous, afford fewer Bubbles in the exhausted Receiver.

Waters also appear to consist of a lighter and heavier Part; and the former easily rises
first

first in Distillation; while the heavier and grosser Parts, require a greater Degree of Heat to bring them over the Helm. Whence it follows, that Waters lose their more subtile Parts in boiling, and leave the cruder and less useful ones behind; as is known to all those who are curious in making Coffee: For if the Berries, when ground, are put into Water that has been long boiling, the Liquor so made, becomes less quick and pleasant to the Taste. It has also been observed, that some Waters rise much faster than others in Distillation. Waters also differ extremely in their Gravity, as appears by the Hydrometer, or Water-Poise; those which abound with Earth and Salts, causing the Instrument to sink less deep than such as are pure: But Distillation is one of the best Methods of discovering the Purity of Waters. as it not only renders the Quantity, but also the Quality evident to the Senses. It is surprising to see what a large Mass of earthy or stony Matter remains after the Dissolution of some Waters. I once distilled two Quarts of Spring-Water in a Glass Body, to a Dryness, repeating the Operation ten times in the same Vessel;

Vessel; and by that means obtained a hard stony Crust at the Bottom of the Vessel, as thick as the Back of a Knife. Most Waters contain a chalky Earth, some an Oker, some a stony Matter, and others a Portion of common Salt. But the true Way of examining whether Waters are pure, is by chemical Experiments; two of which I have singled out for my own Use, and recommend to others, as exactly discovering the Purity or Impurity of Waters. The first is by dropping into them Oil of Tartar; and the second a Solution of Silver in Aqua-fortis. If the Waters are pure, such as Rain-water, Water distilled, and some Sorts of Spring-water, no Alteration will follow on dropping these Liquors into them; but if gross and impure, they turn milky with Oil of Tartar, especially if they abound with a chalky Earth; and the Solution of Silver turns impure Waters thick, grey coloured, and, if they participate of Iron, almost red.

The Effects of Waters also manifest their Nature, Subtility, and Purity: Thus those
that

that are light and soft, seem best for mollifying the Bones of Animals, and the boiling of Sea-Fish. The Whitsters and Bleachers find a remarkable Difference in Waters ; the softer and fatter Sorts thereof, serving better to wash and bleach, than such as are ponderous, hard, and take Soap with Difficulty. The Bakers find, that the more soft and subtile Waters make their Bread rise well. The Gardeners observe, that such Waters as are light, subtile, and spirituous, are much better for their Plants, than such as are hard. The Masons, Makers of Terrace, and Figures in Plaister of Paris, find hard Water the best for their Purpose, and can scarcely work with such as are soft, so as to give their Work a proper Degree of Strength and Firmness. The Chemists find a great Difference in Waters ; those of Rain being best suited to wash their Magisteries and metalline Powders, as readily dissolving the Salts, which hard Spring-waters will scarcely touch. We daily observe, in the domestic Operations of Brewing, Washing, making
Tea,

Tea, &c. that the more subtile and soft Sorts are better for these Purposes than Spring-Water.

But for medicinal Purposes, we prefer Rain-Water, as what is naturally distilled by the Sun, and thus rendered subtile, and fitter for Solutions, Infusions, Extracts, and all internal Uses. Only this Water being mixed with various mineral, vegetable and animal Exhalations, is thence rendered easily corruptible, if exposed to the free Air, or suffered to stand long in Wooden Vessels. The Rain that falls in the Month of *March*, will keep longer, as not then receiving so many Effluvia. The better to fit this Water for medicinal Use, it should be kept in earthen Vessels, stopped close; and thus, if it be collected, not in Cities and Towns from the Spouts of Houses, but in the open Fields, it may be kept sound and fit for Service several Years.

Next to Rain-Water, in point of Goodness, is that of Rivers; but as Rivers proceed from

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the Springs situated in high and mountainous Places, and as Rains increase these Springs, which running over vast Tracts of Land, absorb many different Matters from the Earth; hence Rivers become more turbid and impure, the larger Tracts of Land they wash in their Course. Add to this, that they take up numerous heterogeneous Parts from the Bottom they flow over, whence there often arises a considerable Difference between Rain and River-Water. Lastly, Rivers being perpetually exposed to the free Air, and the Action of the Sun, have their most subtile Parts exhaled and raised into the Atmosphere, so as to supply the Matter of Clouds and Rain.

There is also a great Difference between the Waters of Rivers; for those that have a swift Course, or run violently down from the Mountains, where they rise, into the lower Plains, are very different from those where the Course is slow and gentle, and which rise in lower Places. Thus the rapid Rivers usually afford a light and subtile Water, not very subject to Corruption; tho' some-

somewhat improper for the feeding and nourishing of Fish, because the Rapidity of the Motion prevents the Sperm of the Fish from adhering to the Banks, so as to be there animated by the Heat of the Sun. But if these rapid Rivers do not greatly abound with Fish, the few they produce are excellent and well tasted: Thus the *Rbine* and the *Rbone*, which rise from the highest Mountains of the Country of the *Grifons*, are found to be much lighter than the Waters of other Rivers. And it is remarkable, that the Ships coming out of the River *Mayne* into the *Rbine*, draw much more Water in the latter than in the former: And indeed the Waters of both the *Rbine* and the *Rbone*, appear, on being examined hydrostatically, to be nearly equal in Lightness to Rain-Water. And as both these Rivers are very rapid, their Waters are by that Means rendered less corruptible, and therefore allowed to excel the Waters of all other Rivers, for internal medicinal Uses. And we are accordingly told by a good Writer on the Water of the *Rbone*, that “if

“ it be kept in Wine-Cellars, put up into
 “ large Earthen Jars, so as there to deposit its
 “ Sediment, for some Weeks or Months be-
 “ fore it is drank, it thus becomes pure and
 “ excellent, and will afterwards keep many
 “ Years, or even an Age, without spoiling
 “ or corrupting *”.

The Rivers that flow gently, differ from the former, not only on account of the immense Quantities of Fish they breed; but also because they generally run on fat clayey Bottoms, or such as afford proper Retreats and Nutriment to Fish; whence such Rivers are not so clear and Crystalline as those of a rapid Course; But then such Waters are of a softer Nature, and serve for the Purposes of Washing, Fulling, Scouring, &c. without any considerable Addition of Soap, Hence it follows that River Waters are not all alike, or equally proper for medicinal Purposes: Those that should be chosen for that Purpose, are clear, light, do not easily

* *Jacob. Spon. in Observation. circa Aqua Rhodan. in Act. Erudit. Ann. 1683. P. 519.*

corrupt,

corrupt, and exhibit no Alteration on the Addition of Oil of Tartar, or any metalline Solution. It must be constantly observed, that Rivers of a rapid Course, are universally more wholesome than those which flow with a slow and gentle Current.

Spring-Waters are also sometimes observed to differ in their Virtues; for according to the different Nature of the Soil, or the earthy Matters they meet with or imbibe, they receive a different Nature and Disposition; whence we seldom find Springs of a perfectly pure and light Water. The greatest Part of them leave, on Distillation, a copious earthy Substance. There are but few that do not turn thick with metalline Solutions, or alkaline Salts. Some of them contain common Salt; and others a subtile, volatile Vitriol. If they contain common Salt, Oil of Tartar will discover it, by its turning milky; if they contain a vitriolic Principle, the Infusion of Galls will turn it black. Others again contain Particles of Iron, and thence acquire a styptic Taste, and

and on standing some Time in a Bottle, deposit an Oker. It is therefore the Business of Art and Industry, out of so large a Number of Springs wherewith Nature supplies us, to discover the most wholesome, which are known by their Lightness, Transparency, Purity, long Keeping, and the Trials abovementioned. There is another Difference observable in Spring-Waters, some being hard and others soft, the latter will keep the longest, and will not so easily freeze as the former. Both of them are wholesome and medicinal, if properly adapted to the Disease and Constitution of the Patient.

Having thus shewn which Waters are most proper for medicinal Uses, and how they are distinguished and examined, we shall proceed to prove the Excellency and universal Virtue of pure Water.

Our first Position is, That pure and light Waters are agreeable to the different Natures and Constitutions of all Men ; for
since

since the Circulation of the Fluids through
 the Canals and finest Vessels, is what pre-
 serves and secures the Body from Corrup-
 tion, and keeps the Blood and Juices in a
 thin moveable State, Water must be ne-
 cessarily appropriated to the Continuance of
 Life. The Fluids of the Body serving to
 Nutrition and the vital Offices, and of
 which the Solids also are composed, actually
 consist both of Solids and Fluids. That
 there are solid Parts contained in the Blood,
 is evident from drying it; and that these
 Parts are of different Natures, some saline,
 others oily, some mucilaginous, and others
 earthy, is evident to the Senses by the in-
 flammable Property they acquire after Eva-
 poration, and other chemical Experiments.
 In short they are a Number of heterogene-
 ous or dissimilar Parts, united into one whole,
 which is very corruptible, when put into a
 State proper for Corruption; that is a State
 of Warmth, Rest, and Moisture. To pre-
 vent the Fluids from thus corrupting, and
 consequently infecting and changing all the
 other

other Parts of the Body, it is necessary they should never stagnate or collect together, for otherwise Putrefactions would immediately ensue: Whence these subtile solid Particles both oily and earthy, should not only be kept in perpetual Motion among themselves, but also circulate in a progressive Motion through the finest Tubes of the Body, that the solid Parts of the Blood may be divided into extremely fine Globules, by the Motion of Attrition, or Action and Re-action between the Juices and fibrous Parts. Whence we see the Necessity of an aerial or æthereal Fluid, and elastic Principle, being joined with a large Quantity of an aqueous Fluid; that is, the Necessity of pure Water to secure this indispensable Effect. And hence it is, that upon examining the Blood taken from a Man in Health, we find, at least, two Parts of a Fluid for one of a dry and solid Matter; for I have frequently observed twelve Ounces of Blood to contain eight Ounces of a liquid, and four of a solid Substance. It is

is also evident that the Blood contains a large Quantity of a subtile, aerial and æthereal Principle, from its Bubbling, when placed under an exhausted Receiver, so as to run over the Edges of a cylindrical Glass, whereof it at first filled only one Half. From the whole therefore we infer, that nothing is more wholesome, nothing better fitted, or more necessary to preserve Life than Water; which is so agreeable to the Nature of the human Body, that it cannot subsist without it, nor even Life itself be long preserved.

Our next Position is, that no Remedy can more effectually secure Health, and prevent Diseases, than pure Water. If we strictly enquire into the Cause of Health, we shall find it to be an equable and free Circulation of the Juices through all the Canals of the Body, even the finest that lead to the excretory Ducts. For by this means it is, that what proves serviceable and proper for Nutrition, remains within, separated by the proper Strainers; and what would prove

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either useless, corruptible, or inconvenient to the Body, is discharged. And here it deserves the utmost Attention, that the Excretions of the Body do not so directly, simply, and absolutely regard Life, as they indirectly regard Health, and the Exercise of all the Functions and Offices; because Health, and even Life itself may be endangered, without any Fault in the Excretions. Thus it is obvious, that the natural Functions of the Body are strongly disordered by violent Passions of the Mind, extreme Pain, Inflammation of the Stomach, and the swallowing of Poison. Nor are the Excretions so much to be regarded in the most obstinate chronical Diseases, as the Obstructions of the glandular Parts, the Indurations, Corruptions, and Mortifications of the Viscera, and Extravasations of the Humours: So likewise in acute Distempers, the inflammatory Disposition of the Blood is principally to be regarded. It is therefore an equable Motion of the Blood and Juices that maintains Health, promotes the Excretion of unnecessary Substances, affords

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a convenient Nourishment to the solid Parts, and furnishes the Nerves and Fibres with that remarkably subtile Fluid, by means of which they feel and move. But whenever this free and equable Motion is obstructed, whether by an Overcharge of Humours, their Tenacity, or by the Weakness of the Spring or Tension of the moving Fibres, it becomes the immediate Occasion of Diseases, especially those we term chronical; for from these Causes proceed Stagnations of the Juices in the larger and smaller Vessels, Obstructions in the excretory Ducts, and Indurations in the glandular Parts; these are soon followed by great Impurities of the Juices, causing Pain and convulsive Disorders; and, not long after, by Putrefaction, the Bane of Health, and the direct opposite to Life. And thus are the true Causes of Diseases formed in the Body.

Every one who perceives the Justness of this Description, will readily grant, that a proper Fluidity of the Blood is highly necessary to procure a free and equable Circulation;

culation ; by means whereof the Vessels
 are kept always open, Obstructions pre-
 vented, Excretions secured, Stagnations and
 Impurities of the Juices prevented, and
 the Causes of Diseases cut off. And whe-
 ther there be in Nature a more proper Re-
 medy for procuring this Fluidity to the
 Blood, we leave to the Judgment of sober
 and experienced Physicians. To us it ap-
 pears, that a pure and subtile Water ex-
 quisitely divides the solid and viscid Parts
 of the Blood and Juices, so as to prevent
 their coagulating, or running together ; at
 the same Time it dissolves the recrementit-
 tious Matters of various Kinds, whether
 earthy, saline, or oily, and discharges them
 by the proper Outlets.

And hence we conceive proceeds the
 Reason why Drinkers of Water, provided
 it be pure and excellent, are more healthy
 and longer lived, than such as drink Wine,
 or Malt-Liquors ; and why it generally gives
 them a better Appetite, and renders them
 plump and fleshy. For certainly Water is
 a very

a very proper Menstruum for dissolving the Aliment, extracting its Chyle, or nourishing Part, and carrying it through all the innermost and finest Canals of the Body. Besides this, it readily washes off and dissolves that tough and viscid Slime, which lines the glandular Coats of the Stomach and Duodenum, or first Division of the Intestines, whereby the dissolving Juices of the Bowels, which are the immediate Instruments of Digestion, may more plentifully mix with the Food, and perform their Office. It is a common Opinion, that the drinking of Water is pernicious to those who eat Fruit: But this is a great Mistake; for in *Spain, Portugal* and *France*, Water is the common Liquor; and yet those People freely eat Fruit all the Summer, without any Inconvenience. Again, those who drink Water are observed to have much sounder and whiter Teeth than others; for Putrefaction and Corruption of the Teeth is caused by the Scurvy, a Disease prevented by the drinking of pure Water, which actually cleanses and washes the Blood, and discharges its Impurities. Add

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to this, that the Drinkers of Water are brisker and more alert in all the Actions both of Mind and Body, than such as use Malt Liquors, most of which produce clammy, viscid, and sluggish Juice, hardly capable of passing through the exquisitely fine Vessels of the Brain and Nerves; whence proceed Indolence and Weakness of the Body, and an Indisposition and Dulness of the Limbs, both to Sense and Motion. And as this plainly appears to be Matter of Fact, it is the more surprizing, that the Drinking of pure Water, which is so conducive to the Preservation both of Life and Health, should be so perversely, and, as it were, unnaturally nauseated by the People of our Country, while it is as strongly coveted and admired in other Nations. Such Malt-Liquors as are thick, and highly nourishing, lay the Foundation of many Disorders among the Inhabitants of the Northern Countries, especially where the Use of Brandy, Spirits, and strong Waters prevails. It is certainly much better for Persons of delicate Constitutions, and sedentary Lives,

to

to accustom themselves to drink the finest and purest Water, either alone, or mixed with Wine, to render it more acceptable.

Having thus considered the singular Efficacy of Water, by way of Prevention, we come next to examine what it will perform in the Cure of Diseases. Physicians divide all Distempers into acute and chronic. Of the acute Kind the principal are Fevers; which, from the Structure of the Body, and the Laws of Motion, appear to be an Increase of the Blood's Velocity and Force, so as to distend both the solid or fibrous and fluid Parts of the Body beyond their natural Size; this Increase of Motion has a Tendency either to overcome and discharge the Cause of the Disorder, or to destroy the Machine itself. Whence there ensues either Recovery, Death, or a Depravation of the Machine, when the Disease terminates in another. And thus Nature, which is often her own best Physician, sometimes also produces Disease and Death. But here we must by no means confound the

the rational Soul with Nature ; which is a Word we use to signify the Structure, Mechanism, and Contrivance of the Body, acting with certain Powers, according to certain necessary mechanical Laws, assigned it by its Maker. A Physician therefore, in the present imperfect State of Medicine, can do no more than supply a proper Matter to this augmented Force in Fevers, during the whole Time they thus regularly continue ; for they have their own natural Periods, which cannot hitherto be safely stopped by Art. This increased Motion and Distention is attended with a great Heat, which violently dissipates the fluid Part of the Blood and Juices, so necessary to Life ; the principal Intention therefore, is to supply this fluid Part in proportion as it wastes. And, as the Tendency of this increased Motion is to break through the Obstructions that cause the Disorder, the Blood can by no Means make its Way, unless sufficiently thinned and diluted with a proper Fluid ; but thus assisted, it may allay the Heat and Inflammation, propel the stagnating

nating Juices, and discharge the offending Matter that causes the Mischief. And Experience shews, that if Water be not the only Thing, there is no better Remedy yet found, than a free and copious Use of it. Whence *Hippocrates*, and others, highly recommend an aqueous Ptisan, or medical Drink for this Purpose. And accordingly, by this alone, with the Assistance of Rest and temperate Warmth, the most violent Fevers have been frequently cured, without any other Medicine. All that the best Physicians do in these Cases, is either to bleed at the Beginning, where the Body is full, or to exhibit an Emetic, if the Distemper is seated in the first Passages; or to prescribe a Sudorific, in order to expel the offending Cause in the most expeditious Manner; but after this, through the whole Course of the Distemper, they give nothing more than cooling, moistening, and perspirative Medicines. The Caution required in the Use of Water for this Distemper, is not to give it too cold, especially near the Crisis, and

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when there is Reason to fear an Inflammation in the first Passages, nor when the Body is stiff and rigid, and the external Parts parched and bound up; but to wait for the Time when there appears a Disposition to sweat; for then it is always proper to give Water in large Quantities.

This is agreeable to the Advice of the best Physicians, and particularly insisted upon by *Lommius*, in his excellent Discourse on Fevers.

Those called chronical Diseases generally arise from an Obstruction of the Viscera and glandulous Parts, or an Over-Charge and Foulness of the Juices, with the Stagnation thereof in the larger Vessels: All which, according to the Rules of Reason and Experience, are to be removed in order to complete the Cure: But to produce this Effect, there is not a more serviceable Remedy than pure Water. How eminently serviceable the medicinal Waters, both of
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hot and cold Springs, are, for this Purpose, is well known from Experience. But the greater Part of their Efficacy, in this Respect, is, beyond all Dispute, owing to the Quantity of pure elementary Water they contain ; for, it would be insignificant to exhibit, in these Distempers, the mineral volatile Spirit, and the Salt which such Waters contain, without that purely aqueous Part. And accordingly, there are numerous Instances of pure and light Water, which, without containing any mineral Ingredients, prove of extraordinary Efficacy in the Cure of chronical Diseases. The Effect therefore cannot possibly be ascribed to any Thing else, but the pure Water. Of this kind, there are numerous Springs in *Germany*, the Waters of which, being pure and subtile, though plentifully abounding with Air and *Æther*, remove most chronical Distempers ; particularly the Stone, the Gout, the Rheumatism, the Scurvy, and Weakness in the Limbs ; and, by procuring the requisite Fluidity to the Humours, they

remove Suppressions of the Hæmorrhoids and
Menses.

As there is therefore sufficient Reason to persuade us, that the Wholesomeness of many Springs depends upon the Goodness of their Waters, it follows, that where other Waters can be procured, they will also have the same Effects. And this also is confirmed by Experience, as will appear from the Testimonies of several Authors *, who shew that the drinking of Water has cured the Obstructions of the Menses, the Head-ach, Inflammations of the Eyes, Colds, Rheums, Inflammations, the Gout, the Cholic, &c. being used either cold or warm, as the Stomach can bear, or the Weakness of the Nerves requires.

* *Riverius, Oper. Lib. iv. Cap. 24. Celsus, Lib. i. Cap. 15. Bellonius, Lib. i. Epidem. p. 106. Sylvaticus, Cap. 1. Observat. 1. Martianus, Rhondeletius, Avicenna, Lib. i. Sect. 2. Cap. XVI. pag. 102.*

The singular Efficacy of pure hot Water also appears from the Nature and Use of drinking Tea; for it is certainly a Mistake to attribute all the good Effects of Tea to the leaves of the Plant. The principal Virtue of this Infusion is doubtless owing to the Quantity of the pure hot Water employed in the making it: While the Herb, by its Astringency prevents the Fibres of the Body from being too much relaxed and weakened by it. Therefore, as numerous Diseases are attended with a strong Contraction of the Fibres, all Physicians, who are well versed in Practice, will be cautious of indulging too free this astringent Plant in such Cases.

That Tea is an astringent or styptic Plant, appears from several Experiments; particularly from its turning inky with a Solution of Iron, or the chalybeate Waters, like Oak-bark, Balauftines, and other astringent Vegetables. And, to speak a serviceable Truth, we have, in our own Country, many Plants, whose Virtues far exceed those of the *Indian* Tea:

Tea : And Choice should be made of those Plants for medicinal Use, according to the Difference of Distempers. Thus, for Example, in Diseases of the Breast, Paul's Betony, is proper ; common Betony in Disorders of the Nerves ; Baum a d Peonyroyal in Disorders of the Uterus ; Groundivy in Ulcers of the Kidneys ; Buck-bean in the Scurvy, &c. being respectively made into Tea, with the purest Water, and drank hot. Again, common Cammomile may be advantageously used by way of Tea, against the Cholic ; Parsley in the Stone ; Crowfoot in the moist Asthma, &c. Rosemary Tea is by many recommended as excellent in many nervous Diseases, viz. the Epilepsy, Palsy, and Apoplexy, and for defending the Body, and preventing the catching of Cold, especially if made with the Flowers of the Plant. But in all Teas, it is a Caution of the highest Moment, that the Water designed for the Infusion be not suffered to boil long, but as it simmers strongly, immediately poured upon

upon the Plant, in order to prevent the Loss of its most subtile Parts.

It now remains to shew, that Water is an an universal Remedy, as it agrees not only with all Constitutions, but in all the Indications of Disorders. And, first, the drinking of Water is serviceable in every Complexion. In the Sanguine, and those of a soft Habit of Body, who have but few of the finest kind of Vessels, it causes the Blood and juices to circulate freely ; which in this Constitution would otherwise flow but slowly, and thence subject to generate Obstructions in the Viscera. In bilious Habits, where the Humours are in brisk Motion, it allays the excessive Heat, which would otherwise evaporate the oily Parts of the Blood, thro' the widened Tubes and Pores of the Body. It likewise proves extremely serviceable, by diluting and thinning the Viscidity of the Blood and Juices, in Persons of Melancholy, and phlegmatic Constitutions.

Again, Water proves agreeable to Persons of all Ages; Children are frequently subject to violent Disorders from the Viscidity and Acrimony of the Milk they feed on, in which Case, besides Absorbents, diluting aqueous Remedies, are of great Service. In Youth, the Overload and Thickness of the nourishing Humours, produce various Diseases; such as Colds, and Eruptions on the Skin, which are excellently remedied by the Use of diluting Liquors. And the same holds true of the Diseases of grown Persons, and those in Years; in all which, the drinking of Water is serviceable. For Men in the Prime of Life are very subject to Inflammations and Fevers; and old Men to such Disorders as proceed from Stoppages and Obstructions; in which Circumstances, there can nothing more proper be given than the finest Water, either hot or cold. We find, by daily Experience, what severe Disorders are occasioned by Irregularity in the menstrual hæmorrhoidal Flux, and to reduce either

ther to their natural Periods, and preserve them in their proper Course, I am convinced from practical Observations, that nothing is more effectual than diluting aqueous Remedies.

It is well known, that a Fulness of Blood and Juices brings on many Distempers; but to prevent this Fulness, the most proper Thing is hot Water, made into an Infusion with Herbs; which thus, by dissolving the glutinous Humours, prevents the Mass of Blood from increasing too fast. A free Use of Water is equally serviceable in purifying bad Juices; as it readily washes off their impure saline and droffy Parts, through all the excretory Passages of the Body. Besides this, the drinking of Water promotes all the Evacuations, keeps the Belly soluble, preserves the urinary Passages open, washes and cleanses the same from the Adhesion of gravelly or stony Matter, and powerfully promotes that most healthy Discharge of insensible Perspiration. Lastly, Water is the effectual Vehicle of all other Remedies. Thus

antiscorbutics and vegetable Medicines appropriated to cleanse the Blood, prove of little Service in correcting the Depravities of the Humours, unless their Virtues are carried, by the Assistance of Water in the Form of Decoctions and Infusions, into the Juices and remote Parts of the Body. To sum up all, in whatever Cases there is a Necessity either of altering, evacuating, opening, or resolving, Water is, at all Times, the best of Remedies.

As Water is thus extensively useful, it may be proper to observe, that those who cannot procure the purest and best Sort of it for medicinal Use, must make use of such Rain or River Water as can be had; but if these are not sufficiently pure, the best way is to distil them; or else bail them slightly with an Addition of *Burnt-hartshorn*. It is doubtless a singular Benefit of Nature, to have large Cities and Countries well watered with wholesome Springs, which thus bountifully supply so much better Remedies
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than those of the Shops. If every prudent and disinterested Physician would carefully examine into the Waters of the Place where he resides, he might then confidently hope to practise with more Satisfaction to himself, and Service to his Patients, than by the common Method, I mean by the miscellaneous Use of numberless uncertain Remedies.

F I N I S.